



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4511

May 10, 2012

Brian J. O'Grady, Vice President-Nuclear
and Chief Nuclear Officer
Nebraska Public Power – Cooper
Nuclear Station
72676 648A Avenue
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT
05000298/2012002

Dear Mr. O'Grady:

On March 27, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. The enclosed inspection report documents the inspection results which were discussed on March 30, 2012, with Mr. D. Willis, General Manager Plant Operations, and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Seven NRC identified findings of very low safety significance (Green) were identified during this inspection. All of these findings were determined to involve violations of NRC requirements. Additionally, one self-revealing finding of very low safety significance (Green) was identified during this inspection. The finding did not involve a violation of NRC requirements.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Cooper Nuclear Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at Cooper Nuclear Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of

B. O'Grady

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NRC's Agency wide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Vince Gaddy, Branch Chief
Project Branch C
Division of Reactor Projects

Docket Nos.: 50-298
License Nos: DRP-46

Enclosure: Inspection Report 05000298/2012002
w/ Attachment: Supplemental Information

cc w/ encl: Electronic Distribution

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000298

License: DRP-46

Report: 05000298/2012002

Licensee: Nebraska Public Power District

Facility: Cooper Nuclear Station

Location: 72676 648A Ave
Brownville, NE 68321

Dates: January 1, 2012 through March 27, 2012

Inspectors: J. Josey, Senior Resident Inspector
C. Henderson, Resident Inspector
S. Garchow, Senior Operations Engineer
Jeff Laughlin, Emergency Preparedness Inspector, NSIR

Approved By: Vince Gaddy, Chief, Project Branch C
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000298/2012002; 01/01/2012 – 03/27/2012; COOPER NUCLEAR STATION, Integrated Resident and Regional Report; Flood Protection Measures, Maintenance Effectiveness, Maintenance Risk Assessments and Emergent Work Control, Operability Evaluations and Functionality Assessments, Surveillance Testing, Problem Identification and Resolution

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by a region-based inspector. Seven Green non-cited violations of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," associated with the licensee's failure to manage risk associated with switchyard maintenance. Specifically, as a result of a risk assessment performed for planned work in the station's switchyard the licensee had identified required risk management actions for these activities to offset the increase in on-line risk. However, workers failed to implement these risk management actions during the performance of the work. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2011-12267.

The licensee's failure to implement required risk management actions to manage the increase in on-line risk during switchyard work was a performance deficiency. The performance deficiency was more than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone, and directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," flowchart 2, "Assessment of RMAs," the inspectors determined the need to calculate the risk deficit to determine the significance of this issue. The inspectors contacted the regional senior reactor analyst who estimated the increase in risk caused by the unmonitored switchyard activity. For the five minute period of exposure, the frequency of the switchyard-centered loss of offsite power was increased by one order of magnitude. The result was an ICCDP of 1.0E-11. As such, this finding

was determined to have very low safety significance. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, because the licensee failed to assure that human error prevention techniques, such as self and peer checking were used to assure that work activities were performed safely. Specifically, individuals working in the switchyard failed to self and peer check prior to moving aerial equipment in the switchyard without spotters [H.4(a)](Section 1R13).

- Green. The inspectors documented a self-revealing finding associated with the licensee's failure to ensure the requirements of Station Procedure 0-CNS-52, "Control of Switchyard and Transformer Yard Activities at CNS," Revision 22, were implemented. Specifically, on February 2, 2012, the work order issued for use by transmission and distribution personnel for modification work in the stations 161 kV switchyard failed to thoroughly evaluate the work scope and provide sufficient detail for the workers to prevent affecting operating equipment. This inadequate work order resulted in tripping the startup station service transformer which resulted in an unplanned down power. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2012-00777.

The failure to follow the requirements of Station Procedure 0-CNS-52 and generate a work order with sufficient level of detail above skill of the craft which referred to appropriate references to provide necessary guidance for the work task was a performance deficiency. The performance deficiency was determined to be more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone, and it directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, because the licensee failed to ensure that supervisory and management oversight of contractor work in the station 161 kV transformer yard was sufficient to ensure that nuclear safety was supported [H.4(c)](Section4OA3).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to assure that the applicable design basis requirements associated with the station's internal flooding analysis in response to a feed water line break was correctly translated into the plant design. Specifically, the licensee used incorrect assumptions when modeling critical channel widths for water flow on the 903 feet elevation of the reactor building which resulted in an inadequate calculation for

ensuring that required safety related equipment would remain operable following a feed water line break event. This issue was entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-00451 and CR-CNS-2012-01218.

The licensee's failure to maintain design control with respect to the internal flooding analysis was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. The inspectors evaluated the finding using IMC 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; (4) did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, because the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes. By failing in 2010, to identify and model critical channel widths for water flow into their flood analysis, the licensee did not have assurance that safety related equipment would remain operable following a feed water line break event [P.1(c)] (Section 1R06).

- Green. The inspectors identified two examples of a non-cited violation of 10 CFR 50.65(b)(2)(i) associated with the licensee's failure to monitor nonsafety-related structures, systems or components that are relied upon to mitigate accidents or transients. Specifically, the licensee did not include either the emergency diesel generator rooms sump high level alarm switches, or the reactor building quad sump pumps, which were relied upon in the station design calculations for mitigating the effects of a moderate energy line break, in the scope of the maintenance rule monitoring program specified in 10 CFR 65(a)(1). This issue was entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-00288, CR-CNS-2012-01585 and CR-CNS-2012-02144.

The licensee's failure to effectively monitor the performance of both the diesel generator rooms sump high level switches and the reactor building quads sump pumps in accordance with 10 CFR 50.65(a)(1) was a performance deficiency. The performance deficiency was determined to be more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone, and directly affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of

Findings,” the finding was determined to have very low safety significance (Green) because the maintenance rule aspect of the finding is not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of a single train system for greater than the technical specification allowed outage time, and was not made risk-significant because of external events. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, because the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes. Specifically, the licensee had an opportunity to identify these maintenance rule scoping issues in 2011, but failed to do so [P.1(c)](Section 1R12).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” associated with the licensee’s failure to assure that the applicable design basis requirements associated with the standby liquid control system test tank were correctly translated into the plant design to ensure that the standby liquid control system would remain operable following a seismic event. The licensee entered this deficiency into their corrective action program for resolution as CR-CNS-2012-01214, CR-CNS-2012-01224, CR-CNS-2012-01232, and CR-CNS-2012-01651. The licensee subsequently performed station calculation NEDC 12-015 “Standby Liquid Control Test Tank Seismic Evaluation” that determined that the standby liquid control system would be operable following a seismic event with the standby liquid control system test tank full.

The licensee’s failure to maintain design control of standby liquid control system was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because there were questions as to whether or not the standby liquid control system would remain functional during a seismic event. The inspectors evaluated the finding using IMC 0609.04 “Phase 1 – Initial Screening and Characterization of Findings.” The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; (4) did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance (Section 1R15).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Controls,” for the licensee’s unevaluated preconditioning of core spray motor operated valves prior to performing as-found

inservice stroke time testing. The licensee entered this deficiency into their corrective action program for resolution as CR-CNS-2012-01070.

The licensee's unevaluated preconditioning of core spray motor operated valves prior to performing as-found inservice stroke time testing was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, unevaluated preconditioning of valves could mask their actual as-found conditions and result in an inability to verify their operability, as well as, make it difficult to determine whether the valves would perform their intended safety function during an event. The inspectors evaluated the finding using Manual Chapter 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability or functionality of the core spray system. The finding has a cross-cutting aspect in the area of human performance associated with resources component because the licensee did not provide complete, accurate, and up-to-date procedures and work packages to prevent precondition of valves prior to testing [H.2(c)](Section 1R22).

- Green. The inspectors identified a non-cited violation of 10 CFR 50 Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," associated with the licensee's failure to furnish evidence of an activity affecting quality associated with the station's analysis of a high-energy line break in the turbine building. To correct this condition, the licensee initiated actions to reconstitute the design calculation. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2012-01905.

The licensee's failure to furnish evidence of completing the calculation of the pressure at which turbine building siding would blow out was a performance deficiency. The performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, in that the lack of evidence of completing the calculation of the pressure at which turbine building siding would blow out calls into question the results of that calculation, which was part of the analysis completed to substantiate that the design of CNS is adequate. Using Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because it was not a design or qualification issue confirmed not to result in a loss of operability or functionality; did not represent an actual loss of safety function of system or train; did not result in the loss of one or more trains of nontechnical specification equipment; and did not

screen as potentially risk-significant due to seismic, flooding, or a severe-weather initiating event. This finding did not have a cross-cutting aspect because the most significant contributor of this finding (which could not be determined) must have occurred during the early 1970s and therefore does not reflect current licensee performance (Section 4OA2).

Cornerstone: Occupational Radiation Safety

- Green. The inspectors identified two examples of a non-cited violation of Technical Specification 5.4.1, associated with station personnel's failure to follow radiation work permit requirements. Specifically, on two separate occasions inspectors observed different workers breaching contaminated systems during planned maintenance activities without radiation protection personnel present as specified by the radiation work permit requirements. This issue was entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-00461, and CR-CNS-2012-00763.

The inspectors determined that the failure of craft personnel to follow radiation work permit requirements when breaching contaminated systems was a performance deficiency. The performance deficiency was determined to be more than minor because if left uncorrected, the continued failure of craft personnel to follow radiation work permit requirements when breaching contaminated systems could become more significant, in that, it could lead to personnel contamination events and unplanned/unexpected dose, and is therefore a finding. The finding was associated with the Occupational Radiation Safety Cornerstone. Using Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspector determined the finding to be of very low safety significance because: (1) it was not associated with as low as reasonably achievable (ALARA) planning or work controls; (2) there was no overexposure; (3) there was no substantial potential for an overexposure; and (4) the ability to assess dose was not compromised. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, because the licensee failed to use conservative assumptions in decision making and adopt requirements to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action when performing work activities that breached contaminated systems [H.1(b)](Section 1R22).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Cooper Nuclear Station began the inspection period at full power on January 1, 2012. On January 14, 2012, power was lowered to approximately 30 percent for scheduled maintenance on a reactor recirculation motor generator. On January 15, 2012, reactor power was increased to 100 percent. On February 2, 2012, reactor power was lowered to approximately 30 percent due to the unplanned loss of the startup station service transformer. On February 3, 2012, reactor power was increased to 100 percent and remained there for the remainder of the reporting period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for February 23, 2012, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On February 23, 2012, the inspectors walked down the emergency-ac power system because its safety-related functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- February 3, 2012, Residual heat removal Div II (B)
- February 17, 2012, Diesel fuel oil transfer system Div II (B)
- February 21, 2012, Standby liquid control

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- February 1, 2012, Switchgear room 1F and 1G
- February 9, 2012, Service water pump room
- February 21, 2012, Cable spreading room
- February 29, 2012, Control and computer room

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to safely shut down the plant. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of

sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- January 19, 2012, Reactor building, 903.6 feet elevation
- March 7, 2012, Diesel generator rooms

These activities constitute completion of two flood protection measures inspection samples as defined in Inspection Procedure 71111.06-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to assure that the applicable design basis requirements associated with the station's internal flooding analysis in response to a feed water line break was correctly translated into the plant design.

Description. While conducting an internal flooding review and walkdown of the 903 feet elevation of the reactor building the inspectors noted that the actual physical dimensions of the west corridor were different than what was assumed in Station Calculation NEDC 09-102, "Internal Flooding – HELB, MELB, and Feedwater Line Break," Revision 0. Specifically, inspectors noted that calculation NEDC 09-102 assumed a 10.8 feet channel width for water flow in the west corridor and it appeared that this measurement was from wall to wall. However, inspectors noted that calculation NEDC 09-102 did not appear to take into account motor control center, MCC-RB, which was in the flow path of the west corridor. The inspectors noted that with MCC-RB in the west corridor flow path the channel width was 8.5 feet which was less than the required 10.8 feet. The inspectors informed the licensee of their concerns and the licensee initiated Condition Report CR-CNS-2012-00451 to capture this issue in the station's corrective action program. As part of this condition report the licensee performed an operability evaluation and determined that this non-conservative flow channel width did not result in the inoperability of safety related equipment.

Condition Report CR-CNS-2012-00451 also directed that the licensee perform an extent of condition review of the assumptions of calculation NEDC 09-102. During this review the licensee identified that the assumed channel widths of both the north and south corridors were inaccurate. Specifically, the calculation had assumed a channel width of 18 feet for both, which is correct when only measuring the building structure; however the actual channel width was less than 18 feet because of other structures in the flow path. The licensee initiated Condition Report CR-CNS-2012-12181 to capture this issue in the station's corrective action program. As part of this condition report the licensee performed an operability evaluation and determined that while there was a marked

increase in the water level on the 903 foot elevation of the reactor building this increase did not result in the inoperability of any safety related equipment.

The inspectors noted that the licensee had previously initiated Condition Report CR-CNS-2009-05972 based on inspector concerns associated with the validity of assumptions in the station's flooding analysis. As a result of this condition report, in 2010 the licensee performed walkdowns of all the areas in the reactor building to support generation of calculation 09-102, which would combine all of the internal flooding analysis into one calculation. The inspectors determined that the walkdowns performed by the licensee had failed to identify that these assumptions were non-conservative. The licensee came to the same conclusion in their review documented in CR-CNS-2012-00451.

Analysis. The failure to maintain design control of the internal flooding analysis assumptions is a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because it questioned assumptions in the approved flood analysis. The inspectors evaluated the finding using IMC 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; (4) did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, in that, the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes. In 2010, by failing to identify and model critical channel widths for water flow into their flood analysis, the licensee did not have assurance that safety related equipment would remain operable following a feed water line break event [P.1(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control", states, in part, that, "measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, from initial construction until March 16, 2012, the licensee failed to assure that flooding analysis assumptions (contained in Calculation NEDC -09-102) were correctly translated into specifications, drawings, procedures or instructions. Because the finding was of very low safety significance and has been entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-00415, and CR-CNS-2012-01218, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000298/2012002-01, "Failure to Maintain Design Control for Internal Flooding."

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On February 21, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations and the quality of the training provided
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

These activities constitute completion of one quarterly licensed operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

- February 23, 2012, 0.50 hour observation during board walk down
- February 27, 2012, 1.5 hours observation of conducting surveillance inservice test for residual heat removal
- February 29, 2012, 0.50 hour observation of control room during board walk down and residual heat removal surveillance, licensee manager observation, noon brief, and validation of RHR-MO-15A indication
- March 1, 2012, 0.25 hour observation of the brief for conducting 4160V 1F undervoltage relay surveillance

- March 6, 2012, 1.25 hours observation of diesel generator 1 monthly surveillance; communication between CRS and BOP; and cool down of diesel generator 1

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure and other operations department policies.

These activities constitute completion of one quarterly licensed-operator performance sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.3 Annual Inspection

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination. For this annual inspection requirement the licensee was in the first part of the training cycle.

a. Inspection Scope

The inspector reviewed the results of the examinations and operating tests to satisfy the annual inspection requirements.

On January 3, 2012, the licensee informed the lead inspector of the following results:

- 8 of 8 crews passed the simulator portion of the operating test
- 48 of 48 licensed operators passed the simulator portion of the operating test
- 48 of 48 licensed operators passed the Job Performance Measure (JPM) portion of the examination

The inspector completed one inspection sample of the annual licensed operator requalification program.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- January 12, 2012, Diesel generator sump level switches and reactor building quad sump pumps
- February 13, 2012, Service water system

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(b)(2)(i) associated with the licensee's failure to monitor nonsafety-related structures, systems or components that are relied upon to mitigate accidents or transients.

Description. While performing reviews of the station's internal Flooding Analysis 09-102, "Internal Flooding – HELB, MELB, and Feedwater Line Break," for the emergency diesel generator rooms, the inspectors noted that both the diesel generator rooms sump high level alarm switches were credited, in part, with mitigating the affects of internal flooding caused by a moderate energy line break. Specifically, the diesel generator rooms sump pumps are normally maintained off and the flooding analysis credited the sump high level alarm to alert operators to the internal flooding issue. The operators would then take actions to mitigate the internal flooding to protect the emergency diesel generator in that room. The inspectors noted that the failure of these switches would result in operators failing to take actions to mitigate the internal flooding caused by a moderate energy line break.

While reviewing the same internal flooding analysis for the reactor building quads, the inspectors noted that the quads sump pumps were credited with mitigating the affects of internal flooding caused by a moderate energy line break in the quads. Specifically, the flooding analysis determined the northeast and southeast reactor building quads water levels following a moderate energy line break were acceptable when the sump pumps were credited for water removal. The inspectors noted that the failure of these sump pumps would result in water levels in the reactor building quads that could result in inoperability of safety related equipment.

Based on the identification that these nonsafety-related switches and pumps were credited with mitigating an accident and the knowledge that the maintenance rule scoping documents did not identify the diesel generator rooms sump high level alarm switches nor the reactor building quads sump pumps as serving a maintenance rule function, the inspectors questioned how they were being controlled and what type of preventative maintenance was being performed. The licensee entered this issue into the corrective action program as Condition Reports CR-CNS-2012-00288, CR-CNS-2012-01585.

The licensee subsequently determined these components should have been scoped in the site's maintenance rule monitoring program and initiated Condition Report CR-CNS-2012-02144 to address this issue.

In 2011, the licensee completed an effort to review system functions and components not currently in scope of the rule to determine if changes were necessary. This effort failed to identify these components for inclusion in the maintenance rule scope.

Analysis. The failure to effectively monitor the performance of both the diesel generator rooms sump high level switches and the reactor building quads sump pumps in

accordance with 10 CFR 50.65(a)(1) was a performance deficiency. The performance deficiency was determined to be more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone and directly affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences because it called into question the reliability of flood mitigation equipment. Using Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because the maintenance rule aspect of the finding it is not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of a single train system for greater than the technical specification allowed outage time, and was not made risk-significant because of external events. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action component, in that, the licensee failed to thoroughly evaluate problems such that the resolutions addressed causes. Specifically, the licensee had an opportunity to identify these maintenance rule scoping issues in 2011, but failed to do so [P.1(c)].

Enforcement. 10 CFR 50.65(b)(2)(i) requires, in part, that the scope of the monitoring program specified in paragraph (a)(1) shall include nonsafety related structures, systems, and components that are relied upon to mitigate accidents or transients. Contrary to the above, from initial maintenance rule scoping in 1996 to the present, the diesel generator sump high level alarm switches and the reactor building quad sump pumps (both non-safety related) were not included in the scope of the monitoring program specified in 10 CFR 50.65(a)(1). The inclusion of the diesel generator sump high level alarm switches and the reactor building quad sump pumps in the scope of the monitoring program is necessary because these components are relied upon to mitigate accidents or transients. Because the finding was of very low safety significance and has been entered into the licensee's corrective action program as Condition Reports CR-CNS-2012-00288, CR-CNS-2012-00758 and CR-CNS-2012-01585, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000298/2012002-02, "Failure to Scope Required Components in the Station's Maintenance Rule Monitoring Program."

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- January 15, 2012, 345 Kv switchyard modification
- January 27, 2012, Startup station service transformer outage
- February 23, 2012, Div 2 4160 Vac undervoltage relay testing

- March 6, 2012, RHR-MO-15A, emergent work control
- March 8, 2012, Service water A instrumentation rack, emergent work control
- March 15, 2012, 250 Vdc station battery A

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," associated with the licensee's failure to manage risk associated with switchyard maintenance.

Description. On December 16, 2011, while observing maintenance in the switchyard, the inspectors had questions about the scope of work activities. The supervisor explained the work scope and discussed the requirements that the crew had been briefed on for the work. Specifically, the crew was using a backhoe, an aerial vehicle. A spotter was also designated for this work activity. The inspectors noted that the requirement for the spotter was a risk-management action required by the risk assessment performed for the work, as documented in Station Procedure 0-CNS-52, "Control of Switchyard and Transformer Yard Activities at CNS" and Work Order 4824128.

During their discussion, the inspectors observed a worker move the backhoe in the vicinity of the electrical towers without a spotter. The inspectors informed the work supervisor and contacted the control room. The control room stopped work and initiated Condition Report CR-CNS-2011-12267 to capture this issue in the station's corrective action program.

Analysis. The failure to implement required risk management actions to manage the increase in on-line risk during switchyard work was a performance deficiency. The

performance deficiency was more than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone and directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shut-down as well as power operations because it could impact switchyard activities. Using manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," flowchart 2, "Assessment of RMAs," the inspectors determined the need to calculate the risk deficit to determine the significance of this issue. The inspectors contacted the regional senior reactor analyst who estimated the increase in risk caused by the unmonitored switchyard activity. For the 5 minute period of exposure, the frequency of the switchyard-centered loss of offsite power was increased by one order of magnitude. The result was an ICCDP of 1.0E-11. As such, this finding was determined to have very low safety significance. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, in that, the licensee failed to assure that human error prevention techniques, such as self and peer checking were used to assure that work activities were performed safely when individuals working in the switchyard failed to self and peer check prior to moving aerial equipment in the switchyard without spotters [H.4(a)].

Enforcement. Title 10 CFR 50.65(a)(4), states in part, that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on December 16, 2011, licensee personnel failed to manage the increase in risk associated with maintenance activities in the stations 345 kV switchyard. Specifically, the licensee did not implement a prescribed risk management action as specified in Work Order 4824128, for the use of aerial vehicles in or near offsite power components. Because the finding is of very low safety significance and has been entered into the corrective action program as Condition Report CR-CNS-2011-12267, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012002-03, "Failure to Appropriately Manage Risk for Maintenance in the Station's Switchyard."

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- January 10, 2012, Diesel generator 1 internal flooding concerns
- February 1, 2012, Diesel generator 2 flood doors N102 and N108
- February 14, 2012, Susceptibility of station equipment during loss of a single phase of power
- February 15, 2012, CS-MOV-7B inservice test preconditioning
- March 15, 2012, Standby liquid control system non-seismic test tank filled

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Updated Final Safety Analysis Report to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to maintain design control of standby liquid control system.

Description. The inspectors reviewed Information Notice 2012-01 "Seismic Considerations – Principally Issues Involving Tanks" which was issued to provide recent operating experience related to seismic concerns and noted that the information notice identified instances when facilities had been maintaining the standby liquid control system test tank full without an adequate seismic analysis. The inspectors determine that the Information Notice was applicable to Cooper Nuclear Station and notified the control room of the Information Notice on February 22, 2012.

The licensee reviewed the information notice and determined that the station was maintaining the test tank full and could not immediately find seismic analysis to support this configuration. The licensee was able to locate the original contactor purchase agreement for the system. The inspectors reviewed this document and noted that while the purchase agreement was written to provide a seismically qualified tank when full of water, they noted that the USAR described the test tank as not being seismically qualified. The licensee initiated the following condition reports CR-CNS-2012-01214, CR-CNS-2012-01224, CR-CNS-2012-01232, and CR-CNS-2012-01651 to capture this issue in the stations corrective action program. The licensee declared both trains of standby liquid control inoperable and drained the test tank on February 23, 2012. With the test tank empty the standby liquid control system remained operable and the licensee put a compensatory action in place to ensure the test tank remained empty pending further evaluation.

During subsequent reviews the licensee determined that the original Burns and Roes's analysis did not analyze for the test tank being full of water during a seismic event and initiated station calculation NEDC 12-015, "Standby Liquid Control Test Tank Seismic

Evaluation.” This calculation subsequently determined that the standby liquid control system would remain operable following a seismic event with the standby liquid control system test tank full.

Analysis. The failure to maintain design control of standby liquid control system was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because there were questions as to whether or not the standby liquid control system would remain functional during a seismic event. The inspectors evaluated the finding using IMC 0609.04 “Phase 1 – Initial Screening and Characterization of Findings.” The inspectors determined that the finding is of very low safety significance (Green) because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; (4) did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, Design Control, states, in part, that “measures be established to assure that applicable regulatory requirements and the design basis, are correctly translated into specifications, drawings, procedures, and instructions.” Contrary to the above, from initial construction until March 16, 2012, the licensee failed to correctly translate the seismic design basis of the standby liquid control system into specification, drawings, procedures, and instruction. Since the seismic design basis was not properly translated, the licensee did not provide assurance that the standby liquid control system would remain functional during a seismic event. The licensee entered the issue into the corrective action program as Condition Reports CR-CNS-2012-01214, CR-CNS-2012-01224, CR-CNS-2012-01232, and CR-CNS-2012-01651. Because the violation was of very low safety significance (Green) and it was entered into the licensee’s corrective action program, the violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012002-04, “Failure to Maintain Design Control of Standby Liquid Control System.”

1R18 Plant Modifications (71111.18)

Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the following temporary modifications:

- January 31, 2012, Encapsulation of flange upstream of MS-V-53
- March 12, 2012, Service water A instrumentation rack

The inspectors reviewed the temporary modifications and the associated safety-evaluation screening against the system design bases documentation, including the Updated Final Safety Analysis Report and the technical specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of two samples for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- February 23, 2012, Service water valve SW-1281
- March 1, 2012, 250 Vdc station battery A
- March 5, 2012, RHR-MO-15A
- March 5, 2012, Diesel engine starting air compressor 1A
- March 7, 2012, Door H305 lubricate seals, examine doors and seals
- March 12, 2012, Service water A instrumentation rack
- March 15, 2012, Diesel generator 2 limiting condition for operation window

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Updated Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and

various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of seven postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements

- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- January 9, 2012, Reactor water level indicating switch NBI-LIS-83A
- January 20, 2012, Scram discharge volume switch and transmitter functional testing
- January 23, 2012, 4160 bus G undervoltage testing
- January 25, 2012, Residual heat removal loop B heat exchanger bypass time delay channel functional test (Div 2), residual heat removal loop B pump start time delay channel functional test (Div 2), residual heat removal loop B injection valve time delay channel function test (Div 2)
- February 13, 2012, Reactor core isolation cooling inservice test
- February 17, 2012, Core spray motor operated valve inservice test

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

Findings

(1) Unevaluated Preconditioning for Core Spray Motor Operated Valves prior to Conducting As-Found Inservice Surveillance Testing

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Controls," for the licensee's unevaluated preconditioning of core spray motor operated valves prior to as-found inservice testing.

Description. On February 14, 2012, during review of the shift narrative logs, the inspectors noted that core spray Division II suction valve (CS-MO-7B) and minimum flow valve (CS-MO-5B) were closed in support of Work Order 4802999, "Examine and Lubricate and Stroke Core Spray Pump B (Div II) Condensate Supply Valve (CS-V-67),"

which is a required five year preventative maintenance activity. The closing of CS-MO-7B and CS-MO-5B prevented the inadvertent water transfer from the condensate storage tank to the torus while CS-V-67 was open. This maintenance activity was scheduled and conducted prior to the scheduled performance 6.2CS.201, "CS Motor Operated Valve Operability Test (IST) (Div 2)," Revision 17, and resulted in an instance of preconditioning of CS-MO-7B and CS-MO-5B. The inspectors performed additional reviews for similar issues and determined that on August 1, 2011, the licensee had pre-conditioned core spray Division I suction valve (CS-MO-7A) and minimum flow valve (CS-MO-5A) in support of Work Order 474336, "Examine, Lubricate and Stroke Core Spray Pump A (Div I) Condensate Supply Valve (CS-V-66)." CS-MO-7A and CS-MO-5A were required to be closed to support CS-V-66 maintenance for the same reason CS-MO-7B and CS-MO-5A were closed. This was also scheduled and performed prior to the scheduled performance of Surveillance Procedure 6.1CS.201, Revision 16, "CS Motor-operated Valve Operability Test (IST) (Div 1)."

Inspection Manual Technical Guidance Part 9900, "Maintenance - Preconditioning of Structures, Systems, and Components Before Determining Operability," defines preconditioning, in part, as:

"The alteration, variation, manipulation, or adjustment of physical condition of an SSC before or during Technical Specification surveillance or ASME code testing."

The technical guidance also defines unacceptable preconditioning, in part, as:

"The alteration, variation, manipulation, or adjustment of physical condition of an SSC before or during Technical Specification surveillance or ASME code testing that will alter one or more of an SSC's operational parameters, which results in acceptable test results. Such changes could mask the actual as-found condition of the SSC and possibly result in an inability to verify the operability of the SSC. In addition, unacceptable preconditioning could make it difficult to determine whether the SSC would perform its intended function during an event in which the SSC might be needed."

Technical Guidance Part 9900 further describes that some types of preconditioning may be considered acceptable, but that, "this preconditioning should have been evaluated and documented in advance of the surveillance." Since the licensee had not performed an evaluation to justify whether this constituted acceptable preconditioning of the motor-operated valves prior to conducting CS-V-67 and CS-V-66 maintenance the inspectors determined that this constituted unevaluated preconditioning of the motor-operated valves. As such, the inspectors determined that this activity had the potential to mask the actual condition of the valves.

The inspectors informed the licensee of their concerns and the licensee initiated Condition Report CR-CNS-2012-01070 to capture this concern in the corrective action program. The licensee subsequently performed a review of trend data of the valves and

determined that these four examples of preconditioning did not mask any adverse conditions.

Analysis. The unevaluated precondition of core spray motor-operated valves prior to performing as-found testing of the inservice testing surveillance was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, unevaluated preconditioning of valves could mask their actual as-found conditions and result in an inability to verify their operability, as well as make it difficult to determine whether the valves would perform their intended safety function during an event. The inspectors evaluated the finding using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because the finding was confirmed not to result in a loss of operability or functionality of the core spray system. The finding has a cross-cutting aspect in the area of human performance associated with the resources component because the licensee did not provide complete, accurate, and up-to-date procedures and work packages to prevent preconditioning of valves prior to testing [H.2.c].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XI, Test Control, states, in part, that, "A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Contrary to the above, on August 01, 2011, and February 14, 2012, the licensee performed testing on core spray motor-operated valves CS-MO-7B, CS-MO-7A, CS-MO-5B, and CS-MO-5A prior to conducting as-found inservice stroke time testing, and created an unevaluated precondition for these valves. This preconditioning called into question whether or not the valves would perform satisfactorily in service. The licensee entered the issue into the corrective action program as Condition Report CR-CNS-2012-01070. Because the violation was of very low safety significance (Green) and it was entered into the licensee's corrective action program, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012002-05, "Unevaluated Preconditioning for Core Spray Motor-operated Valves prior to Conducting As-Found Inservice Surveillance Testing."

(2) Failure to Follow Radiation Work Permit Requirements

Introduction. The inspectors identified two examples of a non-cited violation of Technical Specification 5.4.1, associated with station personnel's failure to follow radiation work permit requirements.

Description. On January 6, 2012, inspectors observed craft personnel perform Surveillance Procedure 6.1ADS.704, "ADS Water Level Channel Functional Test in

Mode 1, 2, or 3 (Div. I),” Revision 7, with the workers signed onto Radiation Work Permit 2012-013, “Instrument and Control Activities,” Task 1, for the job. The inspectors noted that craft personnel breached the automatic depressurization system to connect their test instruments without radiation protection personnel present while this was occurring. The inspectors questioned this action because Surveillance Procedure 6.1ADS.704, Step 2.2, identified that the system fluid was contaminated and Radiation Work Permit 2012-013 required that radiation protection personnel be present when breaching contaminated systems. When the inspectors asked the workers if radiation protection personnel were required to be present for the breaching activity the workers replied that it was not. The inspectors therefore determined that the workers had failed to follow the requirements of Radiation Work Permit 2012-013, and informed the radiation protection manager as such. Condition Report CR-CNS-2012-00763 was written to capture this issue in the station’s corrective action program.

On January 19, 2012, inspectors observed craft personnel perform Surveillance Procedure 6.2RPS.708, “North SDV High Water Level Switches and Transmitters Channel Functional Test (Div 2),” Revision 8, with the workers signed onto Radiation Work Permit 2012-073, “RX Building Activities in High Rad Areas,” Task 4, for the job. The inspectors noted that craft personnel breached the scram discharge volume system to connect their test instruments without radiation protection personnel present while this was occurring. The inspectors questioned this action because Surveillance Procedure 6.2RPS.708, Step 2.2, identified that the system fluid was contaminated and Radiation Work Permit 2012-073 required that radiation protection personnel be present when breaching contaminated systems. When the inspectors asked the workers if radiation protection personnel were required to be present for the breaching activity the workers replied that it was not. The inspectors again determined that the workers had failed to follow the requirements of Radiation Work Permit 2012-073, and informed the radiation protection manager. Condition Report CR-CNS-2012-00461 was written to capture this issue in the station’s corrective action program.

Analysis. The failure of craft personnel to follow radiation work permit requirements when breaching contaminated systems was a performance deficiency. The performance deficiency was determined to be more than minor because if left uncorrected, the continued failure of craft personnel to follow radiation work permit requirements when breaching contaminated systems could become more significant, in that, it could lead to personnel contamination events and unplanned/unexpected dose, and is therefore a finding. The finding was associated with the Occupational Radiation Safety Cornerstone. Using Manual Chapter 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the inspector determined the finding to be of very low safety significance because: (1) it was not associated with as low as reasonably achievable (ALARA) planning or work controls; (2) there was no overexposure; (3) there was no substantial potential for an overexposure; and (4) the ability to assess dose was not compromised. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, in that, the licensee failed to use conservative assumptions in decision making and adopt requirements to demonstrate that the proposed action is safe in order to proceed rather than a

requirement to demonstrate that it is unsafe in order to disapprove the action when performing work activities that breached contaminated systems [H.1(b)].

Enforcement. Technical Specification 5.4.1.a requires implementation of applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 7(e) of Appendix A requires, in part, procedures for access control to radiation areas including a radiation work permit system should be prepared. Radiation Protection Procedure 9.ALARA.4, "Radiation Work Permit," Revision 15, implements this requirement and states, in part, that each individual is responsible to comply with the radiation work permit requirements. Radiation Work Permits 2012-013, "Instrument and Control Activities," and 2012-073, "RX Building Activities in High Rad Areas," required that radiation protection personnel be present prior to breaching contaminated systems. Contrary to the above, on January 6 and January 19, 2012, craft personnel failed to comply with radiation work permit requirements when maintenance workers breached contaminated systems without radiation protection present. Because the finding is of very low safety significance and has been entered into the corrective action program as Condition Reports CR-CNS-2012-00461, CR-CNS-2012-00763 and CR-CNS-2012-00766, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012002-06, "Failure to Follow Radiation Work Permit Requirements."

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (IP71114.04)

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) located under ADAMS accession number ML12061A253 as listed in the attachment.

The licensee transmitted the EPIP revisions to the NRC pursuant to the requirements of 10 CFR 50, Appendix E, Section V, "Implementing Procedures." The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the attachment.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observations

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on February 21, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the plant's simulator to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the second quarter 2011 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for the period from the first quarter 2011 through the fourth quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2011 through December 2011, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned scrams per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7000 critical hours performance indicator for the period from the first quarter 2011 through the fourth quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of January 2011 through December 2011, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one unplanned transients per 7000 critical hours sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 In-depth Review of Operator Workarounds

a. Inspection Scope

The inspectors performed a review of control room deficiencies to ensure that the licensee is identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program, and has proposed or implemented appropriate corrective actions.

These activities constitute completion of one in-depth review of operator workarounds sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection

Deficiencies Associated with the Stations High Energy Line Break Analysis

- a. During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting a potential issue with a system credited with protection of other equipment during a high energy line break event. The inspectors selected this issue for review because of the frequency at which issues were being identified with high energy line break mitigating equipment, and because the failure to properly address identified deficiencies or evaluate changes made to the facility and its supporting design analysis could have a significant impact on station equipment and result in systems not being able to perform their design function. The inspectors considered the following, as applicable, during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

Introduction. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," associated with the licensee's failure to

furnish evidence of an activity affecting quality associated with the station's analysis of a high-energy line break in the turbine building.

Description. During reviews of the station's analysis for a high-energy line break in the turbine building, the inspectors noted that USAR Section IV-12 states, in part,

“An evaluation has been performed to substantiate that the design of CNS is adequate to withstand the effects of a postulated rupture or break in any high energy fluid piping system outside the primary containment, including the double-ended rupture of the largest line in the main steam and feedwater system. This study or evaluation, which is captured in the CNS high energy line break analyses, is contained in Amendments 20 and 25 to the Final Safety Analysis Report.”

The inspectors' review of Amendment 25, which was issued in the early 1970s, revealed that Section III D.10(a)(2) of this amendment stated, in part, that following the failure of either of the main steam lines in the turbine area, the building siding would blow out at 0.5 psid, and that failure of the siding would completely vent the steam/water mixture in the upper building area to the outside atmosphere and completely relieve pressure from that space. When the inspectors asked to review the calculation that determined that the building siding would blow out at 0.5 psid, the licensee was unable to retrieve that calculation. Furthermore, the licensee determined that the engineering firm that had completed the original calculation was unable to retrieve it. The licensee initiated Condition Report CR-CNS-2012-01905 to document that they had been unable to retrieve a copy of the subject calculation.

Because the subject calculation was part of the analysis described in USAR section IV-12 to substantiate that the design of CNS is adequate, the inspectors considered that completing that calculation had been an activity affecting quality. Also, because the calculation had been prepared in the early 1970s and had apparently been lost at some later date, the inspectors were not able to determine why the licensee had not been able to furnish evidence of its completion.

Analysis. The licensee's failure to furnish evidence of completing the calculation of the pressure at which turbine building siding would blow out is a performance deficiency. The performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, in that the lack of evidence of completing the calculation of the pressure at which turbine building siding would blow out calls into question the results of that calculation, which was part of the analysis completed to substantiate that the design of CNS is adequate. Using Manual Chapter 0609, Attachment 4, “Phase 1 Initial Screening and Characterization of Findings,” the finding was determined to have very low safety significance (Green) because it was not a design or qualification issue confirmed not to result in a loss of operability or functionality; did not represent an actual loss of safety function of system or train; did not result in the loss of one or more trains of nontechnical specification equipment; and did not screen as potentially risk-significant due to seismic, flooding, or a severe-weather initiating event. This finding did not have a cross-cutting aspect because the most

significant contributor of this finding (which could not be determined) must have occurred during the early 1970s and therefore does not reflect current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVII, Quality Assurance Records, states, in part, that “Sufficient records shall be maintained to furnish evidence of activities affecting quality.” Contrary to the above, from the early 1970s until March 16, 2012, the licensee did not maintain sufficient records to furnish evidence of an activity affecting quality. Specifically, calculating the pressure at which turbine building siding would blow out was an activity affecting quality, and in March 2012, the licensee was unable to furnish evidence of completing that calculation. Because this finding is of very low safety significance and has been entered into the corrective action program as Condition Report CR-CNS-2012-01905, the violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000298/2012002-07, “Failure to Furnish Evidence of an Activity Affecting Quality.”

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 Unplanned Down Power Due to the Loss of the Startup Station Service Transformer

a. Inspection Scope

On February 2, 2012, the inspectors responded to the control room in response to an unplanned down power caused by the loss of the startup station service transformer. Inspectors toured the control room during the event to verify stable plant conditions, monitored the licensee’s actions to restore the transformer to service, reviewed station logs, discussed the event with the operations and maintenance staff and reviewed NUREG-1022, “Event Reporting Guidelines,” Revision 2, to ensure licensee compliance.

b. Findings

Failure to Follow Station Procedure Results in Inadequate Work Instructions

Introduction. The inspectors documented a Green self-revealing finding associated with the licensee’s failure to implement the requirements of Station Procedure 0-CNS-52, “Control of Switchyard and Transformer Yard Activities at CNS,” Revision 22.

Description. On February 2, 2012, the station was in a yellow risk configuration for unplanned repairs on the 250 Vdc battery system A. While in this risk configuration the 345 kV switchyard and portions of the 161 kV switchyard was designated as protected. Specifically breaker 1606 was supplying power to the startup transformer which was supplying power to the recirculation pump B through the reactor recirculation motor generator set.

Coincident to this, transmission and distribution personnel working on the battery system were not allowed to continue work in the 345 kV switchyard, so they switched to performing work activities in the station’s 161 kV transformer yard outside of the designated protected area using Work Order 4874915. This work involved actions with breaker 1604 which had been installed earlier in the week. During this activity workers

landed leads associated with breaker 1604 that induced a voltage in the protective relaying circuit for breaker 1606. That voltage cause breaker 1606 to trip and resulted in a significant power reduction and operating in single recirculation loop mode. The loss of the startup transformer also caused the plant to enter an unplanned orange risk configuration. The licensee initiated Condition Report CR-CNS-2012-00777 to capture this issue into the station's corrective action program.

The licensee's root cause evaluation of this event identified that transmission and distribution personnel had been landing leads on breaker 1604, and that their preparation for this work had not been adequate. Specifically, their preparations had failed to identify that during this work a potential existed for an interaction with breaker 1606 through the protective relaying circuit. The station also determined that this had resulted in inadequate information being provided to the station regarding the work and ultimately this resulted in an inadequate work order. As a result of this, while landing leads an induced voltage was sensed by the protective relaying as a fault which resulted in breaker 1606 tripping. The licensee also determined that operations, work control and work planning did not have the requisite switchyard knowledge to provide adequate reviews/oversight of this kind of work.

As such, the licensee determined that the root cause of this event was that the station did not exercise sufficient oversight of work in the switch yard to satisfy the intent and requirements of Station Procedure 0-CNS-52. The station also identified as a contributing cause work practices, including instructions and work package details related to work performed by transmission and distribution personnel in the 161 kV switchyard lacked the level of quality control rigor required to meet station requirements.

Analysis. The failure to follow the requirements of Station Procedure 0-CNS-52 and generate a work order with sufficient level of detail to provide necessary guidance for the work task was a performance deficiency. The performance deficiency was determined to be more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone, and it directly affected the cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, in that, the licensee failed to ensure that supervisory and management oversight of contractor work in the stations 161 kV transformer yard was sufficient to ensure that nuclear safety was supported [H.4(c)].

Enforcement. This finding does not involve enforcement action because no violation of regulatory requirements was identified. Because the finding does not involve a violation, has very low safety significance, and has been entered into the corrective action program as Condition Report CR-CNS-2012-00777, it is identified as a finding

FIN 05000298/2012002-08, "Failure to Follow Station Procedure Results in Inadequate Work Instructions."

4OA5 Other Activities

(Closed) Violation 05000298/2011002-02: Failure to Assess and Manage Risk for Maintenance That Could Impact Initiating Events (EA-2011-090)

The inspectors reviewed the licensee's immediate corrective actions and implemented corrective actions to raise the level of knowledge and quality of risk assessments. The inspectors noted that the actions implemented by the licensee involved procedure changes, in-depth training and a new qualification program for personnel responsible for performing risk assessments. The inspectors determined that these actions have addressed the concerns expressed in the violation. This violation is closed.

(Closed Violation 05000298/2011006-05: Failure to Correctly Translate Design Requirements into Installed Plant Configuration (EA-2011-176)

The inspectors reviewed the licensee's immediate corrective actions and implemented corrective actions to restore the plant to regulatory conformance and address engineering decision making. The inspectors noted that the actions implemented by the licensee involved generation of an acceptable analysis demonstrating compliance and training with engineering on decision making. The inspectors determined that these actions have addressed the concerns expressed in the violation. This violation is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The lead inspector obtained the final annual examination results and telephonically exited with Mr. D. Werner, Licensed Operator Training Supervisor, on January 9, 2012. The inspector did not review any proprietary information during this inspection.

On March 30, 2012, the inspectors presented the inspection results to Mr. D. Willis, General Manager Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Bednar, Supervisor, Radiation Protection
R. Beilke, Manager, Chemistry
D. Buman, Director, Engineering
J. Corey, Manager, Radiation Protection
L. Dewhirst, Manager, Corrective Actions and Assessment
G. Mace, Manager, Nuclear Assets
D. Madsen, Licensing Engineer
E. McCutchen, Senior Licensing Engineer, Licensing
D. Montgomery, Manager, Emergency Preparedness
R. Penfield, Manager, Operations
S. Rezab, Staff Health Physicist
J. Teton, Supervisor, Chemistry
D. Van Der Kamp, Manager, Licensing
D. Willis, General Manager, Plant Operations
A. Zaremba, Director, Nuclear Safety Assurance
D. Werner, Licensed Operator Training Supervisor

NRC Personnel

J. Josey, Senior Resident Inspector
C. Henderson, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000298/2012002-01	NCV	Failure to Maintain Design Control for Internal Flooding
05000298/2012002-02	NCV	Failure to Scope Required Components in the Station's Maintenance Rule Monitoring Program
05000298/2012002-03	NCV	Failure to Appropriately Manage Risk for Maintenance in the Station's Switchyard
05000298/2012002-04	NCV	Failure to Maintain Design Control of Standby Liquid Control System
05000298/2012002-05	NCV	Unevaluated Pre-conditioning for Core Spray Motor-operated Valves prior to Conducting As Found In-service Surveillance Testing
05000298/2012002-06	NCV	Failure to Follow Radiation Work Permit Requirements
05000298/2012002-07	NCV	Failure to Furnish Evidence of an Activity Affecting Quality

Opened and Closed

05000298/2012002-08	FIN	Failure to Follow Station Procedure Results in Inadequate Work Instructions
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Closed

05000298/2011002-02	VIO	Failure to Assess and Manage Risk for Maintenance That Could Impact Initiating Events
05000298/2011006-05	VIO	Failure to Correctly Translate Design Requirements into Installed Plant Configuration

LIST OF DOCUMENTS REVIEWED**Section 1RO4: Equipment Alignment**MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2011 Sheet 1	B&R Drawing, "Turbine Oil Purification & Diesel Oil Sys"	N44
2012-01	Information Notice, "Seismic Considerations – Principally Issues Involving Tanks"	
2045 Sheet 2	B&R Drawing, "Flow Diagram Standby Liquid Control System"	N21
2077	B&R Drawing, "Flow Diagram – Diesel Gen. BLDG Service Water, Starting Air, Fuel Oil, Sump System & Roof Drains"	N70
DCD-19	Design Criteria Document, "Standby Liquid Control (SLC) System"	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.2.12	System Operating Procedure, "Diesel Fuel Oil Transfer System"	56
2.2.69	System Operating Procedure, "Residual Heat Removal System"	90
2.2A.DGDO.DIV2	System Operating Procedure, "Diesel Fuel Oil Transfer System Component Checklist (Div 2)"	5
6.SLC.101	Surveillance Procedure, "SLC Pump Operability Test"	16
6.SLC.102	Surveillance Procedure, "SLC Test Mode Surveillance Operations (IST)"	23

CONDITION REPORTS

CR-CNS-2005-02064

Section 1RO5: Fire Protection

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
	CNS Fire Hazard Analysis Fire Area II and III, Fire Zone 3A and 3B
	CNS Fire Hazard Analysis Fire Area VII, Fire Zone 9A, 10A, 10B, and 20A
T3.11.1	Technical Requirements Manual, "Fire Detection Instrumentation"

CONDITION REPORTS

CR-CNS-2011-12324

Section 1RO6: Flood Protection Measures

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
NEDC 09-102	"Internal Flooding HELB, MELB, and Feedwater Line Break"	0

CONDITION REPORTS

CR-CNS-2012-00288 CR-CNS-2012-00451

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.0.3	Operations Procedure, "Conduct of Operations"	30
2.3.1	Operations Procedure, "General Alarm Procedure"	60
6.1DG.101	Surveillance Procedure, "Diesel Generator 31 day Operability Test (IST) (Div 1)"	70
6.1RHR.101	Surveillance Procedure, "RHR Test Mode Surveillance"	26

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	Operation (IST)(Div 1)	

Section 1R12: Maintenance Effectiveness

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Operating Test Results	January 5, 2012
Sample CR-CNS-2011-08812 (a)(1) evaluation	
Sample CR-CNS-2011-12071 FFE in Eng database	

CONDITION REPORTS

CR-CNS-2012-01102

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.40	Administrative Procedure, "Work Control Program"	81
0.49	Administrative Procedure, "Schedule Risk Assessment"	30
6.2EE.302	Surveillance Procedure, "4160V Bus 1G Undervoltage Relay and Relay Timer Functional Test (Div 2)"	25
7.0.1.7	Maintenance Procedure, "Troubleshooting Plant Equipment"	14
7.0.4	Maintenance Procedure, "Conduct of Maintenance"	36

CONDITION REPORTS

CR-CNS-2012-00722 CR-CNS-2012-01361 CR-CNS-2012-01579

WORK ORDERS

4803739 4838780 4875701 4879932

4881012

Section 1R15: Operability Evaluations

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	USAR Volume I, Chapter III, Section 9	
NEDC 09-102	"Internal Flooding HELB, MELB, and Feedwater Line Break"	0
2012-01	Information Notice, "Seismic Considerations – Principally Issues Involving Tanks"	

CONDITION REPORTS

CR-CNS-2010-00183 CR-CNS-2012-00587 CR-CNS-2012-00923 CR-CNS-2012-01070
CR-CNS-2012-01214 CR-CNS-2012-01224 CR-CNS-2012-01232 CR-CNS-2012-01651

Section 1R18: Plant Modifications

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
4865044	Temporary Change Configuration	
4879009	Temporary Change Configuration	
4881013	Temporary Change Configuration	
NEDC 12-020		0
NEDC 87-140		4

CONDITION REPORTS

CR-CNS-2012-01665

WORK ORDERS

4865043 4879009 4881012

Section 1R19: Postmaintenance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0.39.1	Administrative Procedure, "Fire Watches and Fire Impairments"	7
0.55	Administrative Procedure, "Control Room Envelope Boundary Breach Control"	3
6.EE.609	Surveillance Procedure, "125V/250V Station Battery Intercell Connection Testing"	16
6.1DG.105	Surveillance Procedure, "Diesel Generator Starting Air Compressor Operability (IST) (Div 1)"	18
6.1SW.302	Surveillance Procedure, "SW Pressure Instrument Calibration and Isolation Logic Functional Test (Div 1)"	7
6.1SW.303	Surveillance Procedure, "SW Pressure Instrument Calibration and Pump Auto Start Functional Test (Div 1)"	10
7.0.5	Maintenance Procedure, "Post-Maintenance Testing"	40

CONDITION REPORTS

CR-CNS-2012-01361 CR-CNS-2012-01458

WORK ORDERS

4748613	4767019	4803739	4822012
4875701	4875871	4879932	4881012

Section 1R22: Surveillance Testing

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	ISTOG Position on IST Component Preconditioning	February 28, 2011
Section VIII-4.6	USAR	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
6.RCIC.102	Surveillance Procedure, "RCIC IST and 92 Day Test"	26
6.1ADS.704	Surveillance Procedure, "ADS Water Level Channel Functional Test in Mode 1, 2, or 3 (Div 1)"	7
6.1CS.201	Surveillance Procedure, "CS Motor Operated Valve Operability Test (IST)(Div 1)"	16
6.2CS.201	Surveillance Procedure, "CS Motor Operated Valve Operability Test (IST)(Div 2)"	17
6.2EE.302	Surveillance Procedure, "4160V Bus 1G Undervoltage Relay and Relay Timer Functional Test (Div 2)"	25
6.2RHR.706	Surveillance Procedure, "RHR Loop B Injection Valve Time Delay Channel Functional Test (Div 2)"	3
6.2RHR.707	Surveillance Procedure, "RHR Loop B Heat Exchanger Bypass Time Delay Channel Functional Test (Div 2)"	6
6.2RHR.708	Surveillance Procedure, "RHR Loop B Pump Start Time Delay Channel Functional Test (Div 2)"	4
6.2RPS.708	Surveillance Procedure, "North SDV High Water Level Switches and Transmitters Channel Functional Testing (Div 2)"	8

CONDITION REPORTS

CR-CNS-2010-00130 CR-CNS-2012-00416 CR-CNS-2012-01070

WORK ORDERS

4743361 4802999 4813207 4838451

1EP4: Emergency Action Level and Emergency Plan Changes

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EPIP 5.7.1	Emergency Classification	45
EPIP 5.7.6	Notifications	53
EPIP 5.7.20	Protective Action Recommendations	23

Section 40A2: Identification and Resolution of Problems

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2.0.12	Operations Procedure, "Operator Challenges"	9
2.2.70	Operations Procedure, "RHR Service Water Booster Pump System"	67

CONDITION REPORTS

CR-CNS-2005-08735 CR-CNS-2007-03617 CR-CNS-2009-10617 CR-CNS-2010-03084
CR-CNS-2010-05299 CR-CNS-2011-04351 CR-CNS-2011-04541 CR-CNS-2011-07756
CR-CNS-2011-07781 CR-CNS-2011-07908